SCIENCE PROGRESSION- Conceptual Knowledge and Understanding

Animals including Humans

Year 1	Year 2	LKS2	UKS2
• I can begin to identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • I can begin to identify and name a variety of common animals that are carnivores, herbivores and omnivores • I can begin to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • I can begin to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • I can begin to understand that animals, including humans, have offspring which grow into adults • I can begin to describe the basic needs of animals, including humans, for survival (water, food and air) • I can begin to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • I can identify and name a variety of common animals that are carnivores, herbivores and omnivores • I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • I can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense • I can understand that animals, including humans, have offspring which grow into adults • I can describe the basic needs of animals, including humans, for survival (water, food and air) • I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement • I can describe the simple functions of the basic parts of the digestive system in humans. • I can identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey	• I can describe the changes as humans develop to old age • I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • I can describe the ways in which nutrients and water are transported within animals, including humans
arm, leg, hand, foot, eyes, ears, mouth, nose see,hear,taste,smell, touch fish, amphibian, reptile, bird and mammal herbivore, carnivore, omnivore offspring, adult, baby, parents		carbohydrates, protein, fats, sugar, dairy, fruit and vegetables, balanced diet, energy skeleton,vertebrates/invertebrates, muscles, bones, ribs, skull, joints, spine, pelvis molars, canines, incisors esophagus, saliva, stomach, intestines, anus,	puberty life-cycle reproduce heart, blood, lungs, oxygenated, deoxygenated, plasma, platelets, red and white blood cells,plasma blood vessels, veins, arteries, pulse

dead, alive, never-alive		digestion, nutrients food chain, energy, producer, predator, prey, decomposer	
Living things and their Habitats			
Year 1	**Year 2**	**LKS2**	**UKS2**
• I can begin to explore and compare the differences between things that are living, dead, and things that have never been alive • I can begin to identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • I can begin to identify and name a variety of plants and animals in their habitats, including micro-habitats • I can begin to describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	• I can explore and compare the differences between things that are living, dead, and things that have never been alive • I can identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • I can identify and name a variety of plants and animals in their habitats, including micro-habitats • I can describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	• I can recognise that living things can be grouped in a variety of ways • I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • I can recognise that environments can change and that this can sometimes pose dangers and have an impact on living things	• I can describe the differences in the life cycles of a mammal, amphibian, insect and a bird • I can describe the life process of reproduction in some plants and animals • I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • I can give reasons for classifying plants and animals based on specific characteristics
fish, amphibian, reptile, bird and mammal herbivore, carnivore, omnivore dead, alive, never alive habitat- desert, arctic, rainforest, ocean food chain, predator, prey, diet		classify, classification, classification key environment, deforestation, pollution, extinction, endangered producer, decomposer	life cycle, reproduction, pollination,fertilisation, asexual reproduction, seed dispersal, fruit, stigma, anther, ovary, ovule, pollen, nectar, microorganism, germ, microbe, characteristic, Linnaean system
Plants			
Year 1	**Year 2**	**LKS2**	**UKS2**

• I can begin to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • I can begin to identify and describe the basic structure of a variety of common flowering plants, including trees • I can begin to observe and describe how seeds and bulbs grow into mature plants • I can begin to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • I can identify and describe the basic structure of a variety of common flowering plants, including trees • I can observe and describe how seeds and bulbs grow into mature plants • I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • I can investigate the way in which water is transported within plants • I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	• I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
deciduous, evergreen, plant, tree, leaf, stem, flower, petals, roots seed, bulb, germination, temperature, sunlight, water, healthy, root, shoot		nutrients, photosynthesis, function, pollination,seed dispersal, stigma, anther, ovary, ovule, pollen, nectar	life cycle, reproduction, asexual reproduction, adaptation, evolution
Evolution and Inheritance			
Year 1	**Year 2**	**LKS2**	**UKS2**
(Links with Animals including Humans work on Parents and Offspring?		Links to rocks - fossils	• I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

parent, baby		fossil	offspring characteristic adaptation, natural selection, identical, genes, Charles Darwin
Seasonal changes			
Year 1	**Year 2**	**LKS2**	**UKS2**
• I can begin it observe changes across the four seasons • I can begin to bserve and describe weather associated with the seasons and how day length varies	• I can observe changes across the four seasons • I can observe and describe weather associated with the seasons and how day length varies	*water cycle- different types of precipitation*	*Link to Space unit- Why do we have different Seasons?*
autumn, winter, spring, summer, rain, snow, frost, wind, sun, fog, mist, clouds, temperature (warm/cold/freezing) day, night		precipitation- snow, hail, rain	
Materials and States of Matter			
Year 1	**Year 2**	**LKS2**	**UKS2**

• I can begin to distinguish between an object and the material from which it is made • I can begin to identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • I can begin to describe the simple physical properties of a variety of everyday materials • I can begin to compare and group together a variety of everyday materials on the basis of their simple physical properties • I can begin to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I can begin to describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	• I can distinguish between an object and the material from which it is made • I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • I can describe the simple physical properties of a variety of everyday materials • I can compare and group together a variety of everyday materials on the basis of their simple physical properties • I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • I can describe how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	• I can compare and group materials together, according to whether they are solids, liquids or gases • I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature • I know that some materials are good thermal insulators that prevent the transfer of heat from warm to cold	• I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • I can recognise that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • I can demonstrate that dissolving, mixing and changes of state are reversible changes • I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda
object, material, wood, plastic, metal, water, rock, fabric property- everyday language *e.g hard/soft, stretchy, rough, bendy, see-through, strong etc*		solid, liquid, gas, state, heat, cool, melt, freeze, evaporate, condense, thermometer, temperature, degrees celsius, The water cycle, precipitation, thermal insulator, absorbent/not absorbent, durable,	dissolve, soluble, insoluble, solution, conductor, insulator, filter, filtering, filter paper, sieving, evaporation, reversible change, irreversible change, burning

sort, waterproof, squash, bend, twist, stretch		transparent, translucent, opaque,magnetic	
Electricity			
Year 1	**Year 2**	**LKS2**	**UKS2**
Know that electricity is needed to make some things work. *Know that electricity is needed to make some things work.* *Know that some appliances need batteries and some use mains electricity to work.*		• I can identify common appliances that run on electricity • I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • I can recognise some common conductors and insulators, and associate metals with being good conductors	• I associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • I can use recognised symbols when representing a simple circuit in a diagram
		electricity, mains electricity, battery, wire, bulb, buzzer, motor, switch, circuit, electrical conductor, electrical insulators, metals	cell, voltage, component, circuit diagram, symbols
Earth and Space			
Year 1	**Year 2**	**LKS2**	**UKS2**
			• I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system • I can describe the movement of the Moon relative to the Earth • I can describe the Sun, Earth and Moon as approximately spherical bodies • I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
			solar system, orbit, sphere, Earth's axis, planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune) gas giant, terrestrial planet, meteor, star

			crater
Forces and Magnets			
Early Learning Goal links:			
Year 1	**Year 2**	**LKS2**	**UKS2**
Explore floating and sinking, pushes and pulls. *Explore cars moving quicker on different surfaces.*		• I can compare how things move on different surfaces • I notice that some forces need contact between two objects, but magnetic forces can act at a distance • I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • I can describe magnets as having two poles Predict whether two magnets will attract and repel each other, depending on which poles are facing	• I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces • I can recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect
float, sink, push pull		magnet, magnetic, poles, north pole, south pole, magnetic force,attract, repel, metals, friction, force meter	gravity, air resistance, water resistance, mechanism, machine, lever, pulley, gears, work
Light			
Year 1	**Year 2**	**LKS2**	**UKS2**
• Know that we use our eyes to see - animals including humans		• I can recognise that he/she needs light in order to see things and that dark is the absence of light • I notice that light is reflected from surfaces • I can recognise that light from the sun can be dangerous and that there are ways to protect eyes • I can recognise that light from the sun can be dangerous and that there are ways to protect eyes • I can find patterns in the way that the size of shadows change	• I can recognise that light appears to travel in straight lines • I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. Notice how light can be split into different colours using a prism.

eyes sight light sun		source of light darkness reflect, mirror translucent transparent opaque shadow	prism periscope
Sound			
Year 1	**Year 2**	**LKS2**	**UKS2**
Exploring how to change the volume of a sound during music lessons. • Know we use our ears to hear		• I can identify how sounds are made, associating some of them with something vibrating • I can recognise that vibrations from sounds travel through a medium to the ear • I can find patterns between the pitch of a sound and features of the object that produced it • I can find patterns between the volume of a sound and the strength of the vibrations that produced it • I can recognise that sounds get fainter as the distance from the sound source	*Link to music*
ear sound hearing		vibration volume pitch	
Rocks			
Year 1	**Year 2**	**LKS2**	**UKS2**
		• I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • I can describe in simple terms how fossils are formed when things that have lived are trapped within rock • I can recognise that soils are made from rocks and organic matter	• I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
		fossil rock	paleontologist

		sedimentary soil organic matter crystals molten rock, lava	

Working scientifically knowledge progression					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
I can begin to ask simple questions.	I can independently ask simple questions.	I can begin to ask relevant questions, including asking further questions from my own results.	I can ask relevant questions, including asking further questions from my own results.	I can begin to ask scientific questions.	I can ask scientific questions.
I can begin to recognise that my questions can be answered in different ways.	I can recognise that my questions can be answered in different ways.	I can begin to use different types of scientific enquiry to answer questions.	I can use different types of scientific enquiry to answer questions.	I can begin to plan different types of scientific enquiry to answer questions.	I can plan different types of scientific enquiry to answer questions.
I can begin to use simple equipment.	I can use simple equipment.	I can begin to set up simple practical enquiries.	I can set up simple practical enquiries.	I can begin to set up scientific enquiries.	I can set up scientific enquiries.
		I can begin to use comparative and fair test enquiries.	I can use comparative and fair test enquiries.	I can begin to recognise and control variables where necessary.	I can recognise and control variables where necessary.
I can begin to observe closely.	I can independently observe closely.	I can begin to make systematic and careful observations.	I can make systematic and careful observations.	I can continue to make systematic and careful observations.	I can continue to make systematic and careful observations.
I can begin to carry out simple tests.	I can carry out simple tests.	I can, where appropriate, begin to take accurate measurements using standard units and equipment including thermometers and data loggers.	I can, where appropriate, take accurate measurements using standard units and equipment including thermometers and data loggers.	I can begin to use a range of scientific equipment with increasing accuracy and precision taking repeat readings where appropriate.	I can use a range of scientific equipment with increasing accuracy and precision taking repeat readings where appropriate.
I can identify and classify when groups are given to me.	I can identify and classify when choosing my own simple groups.	I can begin to classify with my own groups and data.	I can classify with my own groups and data.	I can begin to use classification keys.	I can use classification keys.
I can begin to use my observations and ideas to suggest answers to questions.	I can use my observations and ideas to suggest answers to questions.	I can begin to identify differences, similarities or changes when looking at simple scientific ideas and processes.	I can identify differences, similarities or changes when looking at simple scientific ideas and processes.	I can begin to identify casual relationships.	I can identify casual relationships.
		I can begin to report my findings from enquiries including using oral and written explanations, displays, presenting results and conclusions.	I can report my findings from enquiries including using oral and written explanations, displays, presenting results and conclusions.	I can begin to report and present my findings, including explanations of a degree of trust in results including oral and written forms such as displays and other presentations.	I can report and present my findings, including explanations of a degree of trust in results including oral and written forms such as displays and other presentations.

I can begin to gather and record simple data.	I can gather and record simple data independently.	I can begin to gather, record and present data in a variety of ways.	I can gather, record and present data in a variety of ways.	I can begin to gather and record results of increasing complexity	I can gather and record results of increasing complexity
		I can begin to present my findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.	I can present my findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.	I can begin to present my findings including using scientific diagrams, labels, tables, scatter graphs, bar and line graphs.	I can present my findings including using scientific diagrams, labels, tables, scatter graphs, bar and line graphs.
I can begin to use my data to help me answer simple questions.	I can use my data to help me answer simple questions.	I can begin to use my data to help me answer questions.	I can use my data to help me answer questions.	I can use my data and begin to identify whether it is trustworthy to answer my questions.	I can use my data and identify whether it is trustworthy to answer my questions.
		I can begin to use results to draw simple conclusions and make simple future predictions.	I can use results to draw simple conclusions and make simple future predictions.	I can begin to use results to form conclusions and to make future predictions.	I can use results to form conclusions and to make future predictions.
		I can begin to use results to suggest improvements.	I can use results to suggest improvements.	I can begin to use test results to set up further comparative and fair tests.	I can use test results to make predictions to set up further comparative and fair tests.
		I can begin to use straightforward scientific evidence to answer questions or to support my findings.	I can use straightforward scientific evidence to answer questions or to support my findings.	I can begin to identify scientific evidence that has been used to support or disprove ideas.	I can identify scientific evidence that has been used to support or disprove ideas.
research, thermometer, tally chart, bar graph, fair test		classify, diagram, key pattern, investigation, predict/prediction		variable, conclusion, repeated measurements, results, trustworthy, scatter graphs	